

April 2, 2013



Ms. Jaclynne Drummond  
Compliance Hydrogeologist  
NC Department of Environment and Natural Resources  
Division of Waste Management – Solid Waste Section  
1646 Mail Service Center  
Raleigh, North Carolina 27699-1646

**RE: Completion of Landfill Gas Monitoring Probe Installations  
Town of Kernersville Landfill, Permit No. 34-04  
Forsyth County, North Carolina  
JOYCE Project No. 838.1201.12, Task No. 03**

Dear Ms. Drummond:

On behalf of the Town of Kernersville, Joyce Engineering, is submitting the enclosed boring logs for Landfill Gas (LFG) monitoring probes GW-6, GW-7, and GW-8, installed on March 8, 2013 as requested by the Solid Waste Section. These probes were installed in accordance with the LFG Monitoring Plan. In addition, a LFG Monitoring Network site map has been included to identify the locations of the recently installed probes.

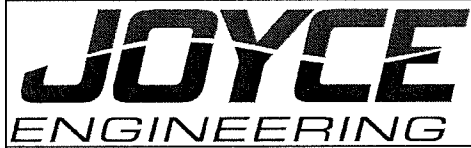
Please feel free to contact me or Larry Hine at (336) 323-0092 if you have any questions regarding this submittal.

Respectfully,  
**JOYCE ENGINEERING**

Adam Cox  
Field Consultant

Attachments: Joyce Boring Logs for GW-6, GW-7, GW-8  
Driller Boring Logs for GW-6, GW-7, and GW-8  
LFG Monitoring Network Site Map

Copy: Christine Ritter, DENR  
Thad Buck – Town of Kernersville

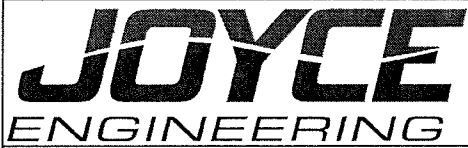


LOG OF BORING GW-6

(Page 1 of 1)

Kernersville closed LF Kernersville NC  JOYCE Project No.838.1301.12 Task 03	Date Started	: 3/8/2013	Drilling Company	: Geologic Exploration, Inc.
	Date Completed	: 3/8/2013	Northing Coord.	:
	Hole Diameter	: 2 inch	Westing Coord.	:
	Drilling Method	: Geo Probe	Survey By	:
	Sampling Method	:	Logged By	: A. Cox

Depth in Feet	Surf. Elev.	Blow Count	% Rec.	USCS	DESCRIPTION	Well: GW-6 TOC Elev.:	Well Construction Information
0					top soil and gravel	<p>Bentonite Seal (0'-3')</p> <p>Riser Pipe (-3'-5')</p> <p>Sand Pack (3'-18')</p> <p>Screen (5'-18')</p>	<p><b>WELL CONSTRUCTION</b></p> <p>Date Compl. : 3/8/2013</p> <p>Hole Diameter(s) : 2-inch</p> <p>Drilling Method(s) : Geo Probe</p> <p>Company Rep. :</p> <p>Drilling Method(s) :</p> <p>Company Rep. :</p> <p><b>WELL CASING</b></p> <p>Material : Schedule 40 PVC</p> <p>Diameter : 1-inch</p> <p>Joints : Threaded, flush</p> <p>Approx. Csg. Stickup : 3-feet</p> <p><b>WELL SCREEN</b></p> <p>Material : Schedule 40 PVC</p> <p>Diameter : 1-inch</p> <p>Joints : Threaded, flush</p> <p>Opening : 0.010 inch</p> <p><b>GRAVEL PACK</b></p> <p>Type : # 2 Sand</p> <p><b>WELL SCREEN SEAL</b></p> <p>Type : Bentonite</p> <p><b>ANNULUS SEAL</b></p> <p>Type :</p> <p><b>PROTECTIVE CSG.</b></p> <p>Type :</p> <p><b>WELL PAD</b></p> <p>Type :</p>
5					red clay, sticky, silty		
					dark organic layer, moist		
					tan sandy clay		
10					sandy, tan		
					tan, orangish, sandy clay		
15					sandy pulverized rock		
					moist, sandy		
					TD @ 18'		
20							Temporary probe
35							



LOG OF BORING GW-7

(Page 1 of 1)

Kernersville closed LF Kernersville NC  JOYCE Project No.838.1301.12 Task 03	Date Started	: 3/8/2012	Drilling Company	: Geologic Exploration, Inc.
	Date Completed	: 3/8/2012	Northing Coord.	:
	Hole Diameter	: 2 inch	Westing Coord.	:
	Drilling Method	: Geo Probe	Survey By	:
	Sampling Method	:	Logged By	: A. Freeman

Depth in Feet	Surf. Elev.	Blow Count	% Rec.	USCS	DESCRIPTION	Well: GW-5 TOC Elev.:	Well Construction Information
0					red clay	<p>Bentonite Seal (0'-4')</p> <p>Riser Pipe (-3'-5')</p> <p>Sand Pack (4'-30')</p> <p>Screen (5'-30')</p>	<p><b>WELL CONSTRUCTION</b></p> <p>Date Compl. : 3/8/2012</p> <p>Hole Diameter(s) : 2-inch</p> <p>Drilling Method(s) : Geo Probe</p> <p>Company Rep. :</p> <p>Drilling Method(s) :</p> <p>Company Rep. :</p> <p><b>WELL CASING</b></p> <p>Material : Schedule 40 PVC</p> <p>Diameter : 1-inch</p> <p>Joints : Threaded, flush</p> <p>Approx. Csg. Stickup : 3-feet</p> <p><b>WELL SCREEN</b></p> <p>Material : Schedule 40 PVC</p> <p>Diameter : 1-inch</p> <p>Joints : Threaded, flush</p> <p>Opening : 0.010 inch</p> <p><b>GRAVEL PACK</b></p> <p>Type :</p> <p><b>WELL SCREEN SEAL</b></p> <p>Type : Bentonite</p> <p><b>ANNULUS SEAL</b></p> <p>Type :</p> <p><b>PROTECTIVE CSG.</b></p> <p>Type :</p> <p><b>WELL PAD</b></p> <p>Type :</p>
5					red clay, sandy dry		
10					dry sandy clay		
15					dry sandy, red sand		
20					red, moist, clay		
25					dry sand		
30					tan sand		
35					dry reddish sand		
					TD @ 30'		
							Temporary probe



LOG OF BORING GW-8

(Page 1 of 1)

Kernersville closed LF Kernersville NC  JOYCE Project No.838.1301.12 Task 03	Date Started	: 3/8/2012	Drilling Company	: Geologic Exploration, Inc.
	Date Completed	: 3/8/2012	Northing Coord.	:
	Hole Diameter	: 2 inch	Westing Coord.	:
	Drilling Method	: Geo probe	Survey By	:
	Sampling Method	:	Logged By	: A. Cox

Depth in Feet	Surf. Elev.	Blow Count	% Rec.	USCS	DESCRIPTION	Well: GW-8 TOC Elev.:	Well Construction Information
0					topsoil and gravel	<p>Bentonite Seal (0'-4') Riser Pipe (-3'-5')  Sand Pack (4'-28') Screen (5'-28')</p>	<p><b>WELL CONSTRUCTION</b> Date Compl. : 3/8/2012 Hole Diameter(s) : 2-inch Drilling Method(s) : Geo Probe Company Rep. : Drilling Method(s) : Company Rep. : <b>WELL CASING</b> Material : Schedule 40 PVC Diameter : 1-inch Joints : Threaded, flush Approx. Csg. Stickup : 3-feet <b>WELL SCREEN</b> Material : Schedule 40 PVC Diameter : 1-inch Joints : Threaded, flush Opening : 0.010 inch <b>GRAVEL PACK</b> Type : <b>WELL SCREEN SEAL</b> Type : Bentonite <b>ANNULUS SEAL</b> Type : <b>PROTECTIVE CSG.</b> Type : <b>WELL PAD</b> Type :  Temporary probe</p>
					red silty clay		
5					red silty clay		
					tan sandy pulverized rock		
10							
15					tan/white sand, pulverized rock and quartz		
20							
25							
30					refusal @ 28'		
35							



# Non RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2581

## 1. WELL CONTRACTOR:

BRIAN THOMAS

Well Contractor (Individual) Name

GEOLOGIC EXPLORATION, INC

Well Contractor Company Name

176 COMMERCE BLVD

Street Address

STATESVILLE

NC

28625

City or Town

State

Zip Code

(704) 872-7686

Area code Phone number

## 2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT#

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) GP-6

## 3. WELL USE (Check One Box) Monitoring ☐ Municipal/Public ☐

Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐

Irrigation ☐ Other ☒ (list use) GAS PROBE

DATE DRILLED 03/08/13

## 4. WELL LOCATION:

9500 FREEMAN ROAD 27284

(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: KERNERSVILLE COUNTY FORSYTH

TOPOGRAPHIC / LAND SETTING: (check appropriate box)

☐ Slope ☐ Valley ☒ Flat ☐ Ridge ☐ Other

LATITUDE 36 ° 11 ' 36.8800 " DMS OR DD

LONGITUDE 80 ° 2 ' 11.1000 " DMS OR DD

Latitude/longitude source: ☒ GPS ☐ Topographic map  
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

## 5. FACILITY (Name of the business where the well is located.)

KERNERSVILLE LANDFILL

N/A

Facility Name

Facility ID# (if applicable)

9500 FREEMAN ROAD

Street Address

KERNERSVILLE

NC

27284

City or Town

State

Zip Code

TOWN OF KERNERSVILLE

Contact Name

720 MCKAUGHAN STREET

Mailing Address

KERNERSVILLE

NC

27285

City or Town

State

Zip Code

( )  
Area code Phone number

## 6. WELL DETAILS:

a. TOTAL DEPTH: 18.0 FEET

b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒

c. WATER LEVEL Below Top of Casing: DRY FT.  
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 0.0 FT. Above Land Surface\*

\*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): N/A METHOD OF TEST N/A

f. DISINFECTION: Type N/A Amount N/A

g. WATER ZONES (depth):

Top Bottom Top Bottom

Top Bottom Top Bottom

Top Bottom Top Bottom

7. CASING: Depth Diameter Thickness/Weight Material

Top 0.0 Bottom 5.0 Ft. 1 INCH SCH 40 PVC

Top Bottom Ft. in. in.

Top Bottom Ft. in. in.

8. GROUT: Depth Material Method

Top Bottom Ft. in. in.

Top Bottom Ft. in. in.

Top Bottom Ft. in. in.

9. SCREEN: Depth Diameter Slot Size Material

Top 5.0 Bottom 18.0 Ft. 1.0 in. .010 in. PVC

Top Bottom Ft. in. in.

Top Bottom Ft. in. in.

10. SAND/GRAVEL PACK:

Depth Size Material

Top 4.0 Bottom 18.0 Ft. 20-40 FINE SILICA SAND

Top Bottom Ft. in. in.

Top Bottom Ft. in. in.

11. DRILLING LOG

Top Bottom Formation Description

0.0 / 12.0 RED SILTY CLAY

12.0 / 25.0 TAN SILTY CLAY

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## 12. REMARKS:

BENTONITE SEAL FROM 0.0 TO 4.0 FEET

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C. WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Brian Thomas 03/11/13  
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

BRIAN THOMAS  
PRINTED NAME OF PERSON CONSTRUCTING THE WELL



# **Non RESIDENTIAL WELL CONSTRUCTION RECORD**

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2581

## 1. WELL CONTRACTOR:

BRIAN THOMAS

Well Contractor (Individual) Name

GEOLOGIC EXPLORATION, INC

Well Contractor Company Name

176 COMMERCE BLVD

Street Address

STATESVILLE

NC

28625

City or Town

State

Zip Code

(704) 872-7686

Area code Phone number

## 2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT#

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) GP-7

## 3. WELL USE (Check One Box) Monitoring ☐ Municipal/Public ☐

Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐

Irrigation ☐ Other ☒ (list use) GAS PROBE

DATE DRILLED 03/08/13

## 4. WELL LOCATION:

9500 FREEMAN ROAD 27284

(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: KERNERSVILLE COUNTY FORSYTH

TOPOGRAPHIC / LAND SETTING: (check appropriate box)

☐ Slope ☐ Valley ☐ Flat ☒ Ridge ☐ Other

LATITUDE 36 ° 11 ' 37.7300 " DMS OR DD

LONGITUDE 80 ° 2 ' 17.8000 " DMS OR DD

Latitude/longitude source: ☒ GPS ☐ Topographic map

(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

## 5. FACILITY (Name of the business where the well is located.)

KERNERSVILLE LANDFILL

N/A

Facility Name

Facility ID# (if applicable)

9500 FREEMAN ROAD

Street Address

KERNERSVILLE

NC

27284

City or Town

State

Zip Code

TOWN OF KERNERSVILLE

Contact Name

720 MCKAUGHAN STREET

Mailing Address

KERNERSVILLE

NC

27285

City or Town

State

Zip Code

( )  
Area code Phone number

## 6. WELL DETAILS:

a. TOTAL DEPTH: 30.0 FEET

b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒

c. WATER LEVEL Below Top of Casing: DRY FT.  
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 0.0 FT. Above Land Surface\*

\*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): N/A METHOD OF TEST N/A

f. DISINFECTION: Type N/A Amount N/A

g. WATER ZONES (depth):

Top Bottom Top Bottom

Top Bottom Top Bottom

Top Bottom Top Bottom

7. CASING: Depth Diameter Thickness/ Weight Material

Top 0.0 Bottom 5.0 Ft. 1 INCH SCH 40 PVC

Top Bottom Ft. in. in. in.

Top Bottom Ft. in. in. in.

8. GROUT: Depth Material Method

Top Bottom Ft. in. in. in.

Top Bottom Ft. in. in. in.

Top Bottom Ft. in. in. in.

9. SCREEN: Depth Diameter Slot Size Material

Top 5.0 Bottom 30.0 Ft. 1.0 in. .010 in. PVC

Top Bottom Ft. in. in. in.

Top Bottom Ft. in. in. in.

10. SAND/GRAVEL PACK: Depth Size Material

Top 4.0 Bottom 30.0 Ft. 20-40 FINE SILICA SAND

Top Bottom Ft. in. in. in.

Top Bottom Ft. in. in. in.

11. DRILLING LOG

Top Bottom Formation Description

0.0 / 8.0 RED SILTY CLAY

8.0 / 19.0 TAN SILTY CLAY

19.0 / 30.0 PARTIALLY WEATHERED ROCK

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## 12. REMARKS:

BENTONITE SEAL FROM 0.0 TO 4.0 FEET

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C. WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Brian Thomas 03/11/13  
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

BRIAN THOMAS  
PRINTED NAME OF PERSON CONSTRUCTING THE WELL





# ***Non RESIDENTIAL* WELL CONSTRUCTION RECORD**

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2581

## 1. WELL CONTRACTOR:

BRIAN THOMAS

Well Contractor (Individual) Name

GEOLOGIC EXPLORATION, INC

Well Contractor Company Name

176 COMMERCE BLVD

Street Address

STATESVILLE

NC

28625

City or Town

State

Zip Code

(704) 872-7686

Area code Phone number

## 2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT#

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) GP-8

## 3. WELL USE (Check One Box) Monitoring ☐ Municipal/Public ☐

Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐

Irrigation ☐ Other ☒ (list use) GAS PROBE

DATE DRILLED 03/08/13

## 4. WELL LOCATION:

9500 FREEMAN ROAD 27284

(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: KERNERSVILLE COUNTY FORSYTH

TOPOGRAPHIC / LAND SETTING: (check appropriate box)

☐ Slope ☐ Valley ☒ Flat ☐ Ridge ☐ Other

LATITUDE 36 ° 11 ' 37.4300 " DMS OR DD

LONGITUDE 80 ° 2 ' 22.0600 " DMS OR DD

Latitude/longitude source: ☒ GPS ☐ Topographic map  
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

## 5. FACILITY (Name of the business where the well is located.)

KERNERSVILLE LANDFILL

N/A

Facility Name

Facility ID# (if applicable)

9500 FREEMAN ROAD

Street Address

KERNERSVILLE

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TOWN OF KERNERSVILLE

Contact Name

720 MCKAUGHAN STREET

Mailing Address

KERNERSVILLE

NC

27285

City or Town

State

Zip Code

( )  
Area code Phone number

## 6. WELL DETAILS:

a. TOTAL DEPTH: 28.0 FEET

b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒

c. WATER LEVEL Below Top of Casing: DRY FT.  
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 0.0 FT. Above Land Surface\*

\*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): N/A METHOD OF TEST N/A

f. DISINFECTION: Type N/A Amount N/A

g. WATER ZONES (depth):

Top Bottom Top Bottom

Top Bottom Top Bottom

Top Bottom Top Bottom

7. CASING: Depth Diameter Thickness/ Weight Material

Top 0.0 Bottom 5.0 Ft. 1 INCH SCH 40 PVC

Top Bottom Ft. in. in.

Top Bottom Ft. in. in.

8. GROUT: Depth Material Method

Top Bottom Ft. in. in.

Top Bottom Ft. in. in.

Top Bottom Ft. in. in.

9. SCREEN: Depth Diameter Slot Size Material

Top 5.0 Bottom 28.0 Ft. 1.0 in. .010 in. PVC

Top Bottom Ft. in. in.

Top Bottom Ft. in. in.

10. SAND/GRAVEL PACK:

Depth Size Material

Top 4.0 Bottom 28.0 Ft. 20-40 FINE SILICA SAND

Top Bottom Ft. in. in.

Top Bottom Ft. in. in.

11. DRILLING LOG

Top Bottom Formation Description

0.0 / 7.0 RED SILTY CLAY

7.0 / 17.0 TAN SILTY CLAY

17.0 / 28.0 PARTIALLY WEATHERED ROCK

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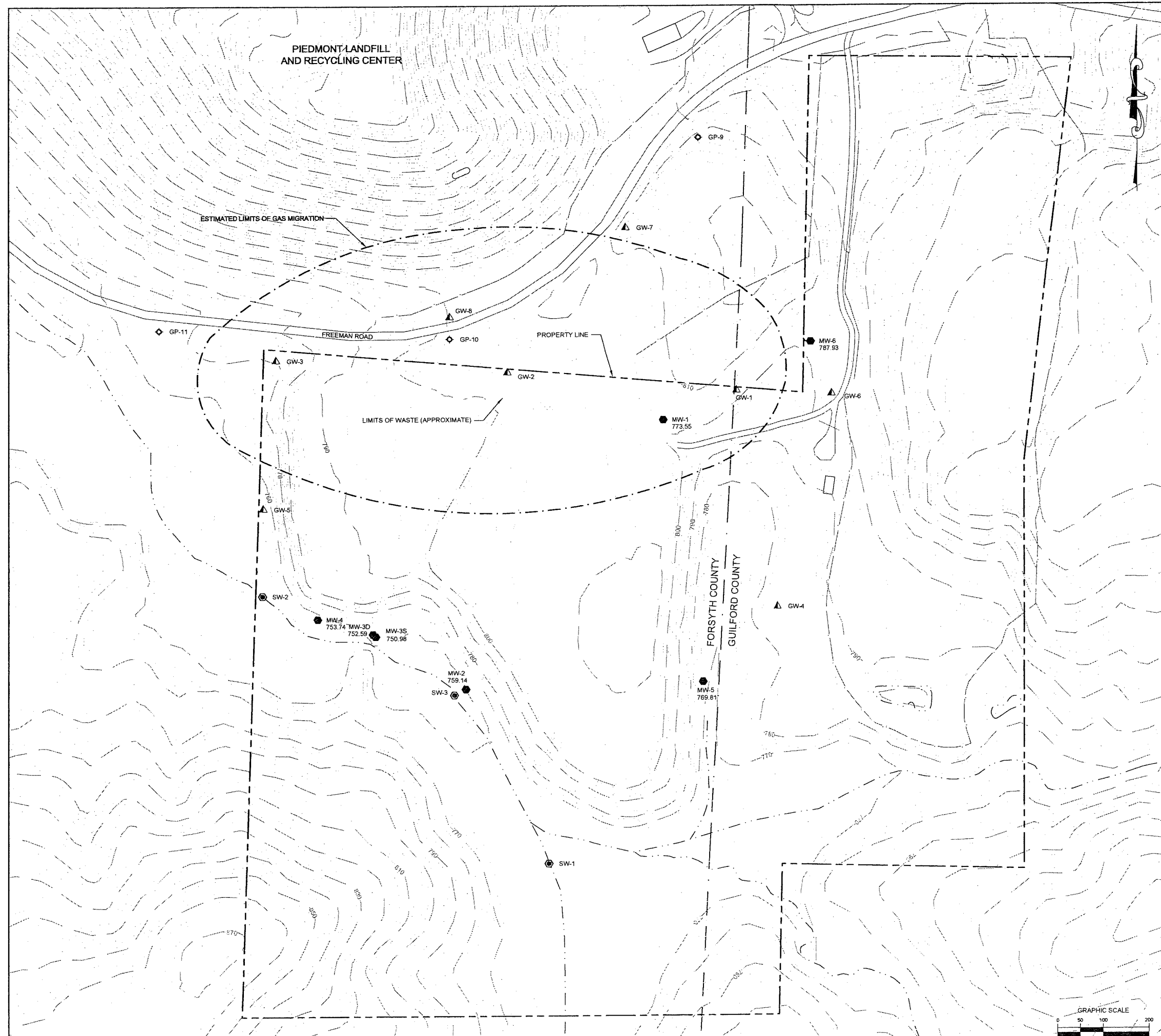
12. REMARKS:

BENTONITE SEAL FROM 0.0 TO 4.0 FEET

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Brian Thomas 03/11/13  
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

BRIAN THOMAS  
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

[illegible]